

Code Challenge

Time Limit : 30 mins

You are allowed to implement the following questions in any language (Suggested Javascript)

Q1. Write a function that takes an array of non-negative integers and strings and return a new array without the strings.

Examples

```
filterArray([1, 2, "test", "test"]) → [1, 2]
filterArray([1, "11", "b", 0, 15]) → [1, 0, 15]
```

Notes

Zero is a non-negative integer.

Q2. Write a function that converts an object into an array, where each element represents a key-value pair.

Examples

```
toArray({ year: 2020 }) → [["year", 2020]]
toArray({ name: "tester", age: 25 }) → [["name", "tester"], ["age", 25]]
toArray({}) → []
toArray('test') → false
```

Notes

Return false if given invalid input.

Q3. Write a function which returns the number of true and boolean type there are in an array.

Examples

```
countTrue([false, true, false, false, true, false, false]) → 2
countTrue([false, false, 'true', false]) → 0
countTrue([]) → 0
```

Notes

Return 0 if given an empty array.

Q4 Given what is supposed to be typed and what is actually typed, write a function that returns the broken key(s). The function looks like:

```
findBroken(correct phrase, what you actually typed)
```

Examples

```
findBroken("Welcome to Apoidea", "Welsome to Apoidea") → ["c"]
findBroken("broken key is found", "krokea key is foud") → ["b", "n"]
findBroken("beethoven", "affthoif5") → ["b", "e", "v", "n"]
```

Notes

Broken keys should be ordered by when they first appear in the sentence. Only one broken key per letter should be listed. Letters will all be in lower case.

Q5 Write a function that returns the majority vote in an array. A majority vote is an element that occurs $> N/2$ times in an array (where N is the length of the array).

Examples

```
majorityVote(["A", "A", "B"]) → "A"  
majorityVote(["A", "A", "A", "B", "C", "A"]) → "A"  
majorityVote(["A", "B", "B", "A", "C", "C"]) → null
```

Notes

The frequency of the majority element must be strictly greater than $1/2$. If there is no majority element, return null. If the array is empty, return null.